

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method comprising following steps in sequence for producing both superior bending fatigue strength and pitting fatigue life of gear(s) and/or shaft components made of steel:

(a) applying a carbonitriding ~~Modified Carbonitriding~~ treatment, comprising the following steps in sequence:

~~carburising~~ carburizing at 900 to 1050 degree Centigrade, cooling down to 840 to 870 degree Centigrade for carbonitriding with 15 to 20% ~~Ammonia~~ ammonia,

quenching in a medium at 120 to 150 degree Centigrade, tempering at 160 to 180 degree Centigrade; and

(b) applying a hard shot peening process having the following process parameters:

shot size ranging from 0.5 to 0.8 mm,

shot hardness ranging from 610 to 800 Hv, and

shot velocity ranging from 60 to 150 m/sec.

2. (Currently amended) The ~~said~~ method as claimed in Claim 1 ~~where-in~~ wherein said steel material comprises ~~comprising~~ 0.10 to 0.30 weight % Carbon, 0.15 to 0.35 weight % Silicon, 0.8 to 1.5 weight % Chromium, 0.6 to 1.5 weight % Manganese, 0.017 to 0.040

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weight % ~~Aluminium~~ Aluminum, and balance iron including impurities, ~~produced in vacuum degassing and alike routes.~~

3. (Currently amended) The ~~said~~ method as claimed in Claim 1 ~~where in~~ wherein said steel material ~~comprising~~ comprises 0.10 to 0.30 weight % Carbon, 0.15 to 0.35 weight % Silicon, 0.3 to 1.5 weight % Chromium, 0.30 to 2.0 weight % Nickel, 0.08 to 0.50 weight % Molybdenum, 0.6 to 1.5 weight % Manganese, 0.017 to 0.040 weight % ~~Aluminium~~ Aluminum and balance iron including impurities, ~~produced in vacuum degassing and alike routes.~~

4. (Withdrawn) The said steel material as claimed in Claim 2 treated by the said Modified Carbonitriding treatment as claimed in 1(a) comprising the following steps in sequence,

Carburising at 900 to 1050 degree Centigrade,

Cool down to 840 to 870 degree Centigrade for Carbonitriding with 15 to 20 % Ammonia,

Quench in a medium at 120 to 150 degree Centigrade

Tempering at 160 to 180 degree Centigrade.

5. (Withdrawn) The said steel material as claimed in Claim 2 processed by the said Hard Shot Peening process as claimed in (b) having the following process parameters:

shot size ranging from 0.5 to 0.8 mm,

shot hardness 610 to 800 Hv,  
shot velocity 60 to 150 m/sec ,  
part coverage 200 to 500% and  
Almen A arc height 0.6 to 0.9 mm.

6. (Withdrawn) The said steel material as claimed in Claim 3 treated by the said Modified Carbonitriding treatment as claimed in 1(a) comprising the following steps in sequence,

Carburising at 900 to 1050 degree Centigrade,  
Cool down to 840 to 870 degree Centigrade for Carbonitriding with 15 to 20 % Ammonia,  
Quench in a medium at 120 to 150 degree Centigrade  
Tempering at 160 to 180 degree Centigrade.

7. (Withdrawn) The said steel material as claimed in Claim 3 processed by the said Hard Shot Peening process as claimed in (b) having the following process parameters:

shot size ranging from 0.5 to 0.8 mm,  
shot hardness 610 to 800 Hv,  
shot velocity 60 to 150 m/sec ,  
part coverage 200 to 500% and  
Almen A arc height 0.6 to 0.9 mm.